Relationship Between Helicobacter pylori BabA and BabB Status with Other Virulence Factors and Their Correlation with Disease Outcome in Iran

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Objectives: Helicobacter pylori (Hp) is an important human pathogen associated with gastrointestinal diseases such as gastritis, peptic ulcer disease (PUD) and gastric cancer. A number of pathogenic factors have been described for this bacterium, and some of them have been proposed as predictive markers of the clinical outcomes. However, with the exception of the cag and vacA status, there is no global consensus regarding the role of the other introduced virulence factors. Therefore, the aim of this study was to investigate the status of Hp strains regarding the Hp babA and babB (blood group antigen binding) adhesins and assess any existing association between the status of these genes and clinical outcomes in Iranian patients.

Methods: Hp virulence genes were amplified by means of gene-specific polymerase chain reaction in clinical isolates of Hp from 72 Iranian patients (16 GC, 12 PUD, 44 NUD patients).

Results: Eleven categories of genotypes were identified with the following frequencies: Group1: A+B+/cagA+/s1(38.0%); Group2: A+B+/cag+/s2(2.8%); Group3: A+B+/cag-/s1(1.4%); Group4: A+B-/cag+/s1(7%); Group5: A+B-/cag+/s2(2.8%); Group6: A-B+/cag+/s1(22.5%); Group7: A-B+/cag+/s2(14.1%); Group8: A-B+/cag-/s1(1.4%); Group9: A-B+/cag-/s2(4.2%); Group10: A-B-/cag+/s1(2.8%); Group11: A-B-/cag+/s2(2.8%). Frequency of Group1 in GC, NUD and PUD patients is 75%, 27.3% and 27.3% respectively and Group7 is prevalent in 36.4% of PUD patients. babA prevalence in GC, NUD and PUD patients was 75%, 47.7% and 33.3% and babB prevalence was 93.8%, 77.3% and 91.7% respectively. 75% of Hp isolates were babA/babB double positive in GC patients.

Conclusion: Frequency of babB is higher among Iranian GC and PUD cases but babA frequency is limited to GC cases. Infecting strains from Groups 1 and 7 were found to be associated with GC and PUD respectively. Co-presence of cagA, s1vacA, babA and babB may work synergistically in exacerbating the resulting inflammation which may create grounds for development of intestinal metaplasia and eventually GC, whereas co-existence of cagA, s2vacA, babB may cause susceptibility to PUD development. In GC cases presence of babA/babB double positive are significantly prevalent ($p = 0.044$). Application of this analysis on additional samples will allow for a more concrete conclusion.

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Soluble CD26 and CD30 in Patients with Brucellosis

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Background: It is suggested that CD26 and CD30 are surface molecules expressed on activated Th1 and Th2 cells, respectively. The aim of the present study was the determination of the levels of soluble (s) CD26 and CD30 co-stimulatory molecules in sera of brucella-infected individuals. The correlations of sCD26 and sCD30 levels with clinical presentation of the disease were assessed.

Methods: The study included 90 brucellosis patients (56 acute disease and 34 chronic form) and 70 healthy controls. The levels of sCD26 and sCD30 were determined by a sandwich enzyme-linked immunosorbent assay in sera of study population.

Results: The serum level of sCD26 and sCD30 were differed in patients with brucellosis. Stratification of patients according to disease status showed significant higher levels of sCD26 in the acute brucellosis compared to chronic disease and controls ($P < 0.0001$). The highest significant levels of sCD30 were shown in patients with chronic brucellosis ($P < 0.0001$). However, the levels of sCD30 in two groups of patients were more than healthy individuals.

Conclusion: These findings indicate that acute brucellosis is driven by Th1 cells, while maintenance of chronic status is associated with both Th1 and Th2-type responses. The sCD30 is more relevant to disease activity than sCD26 in patients with brucellosis.

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Impact of Quinolones on Some Properties of *Vibrio cholerae* Non-01

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Objectives: At the present, cholera belongs to the group of "reemerging" infections. *V. cholerae* non - O1 serotypes non - agglutinating with polyvalent O1 antiserum are mainly associated with sporadic cases of diarrhoeae and extraintestinal infections. Besides enterotoxin and endotoxin, *V.cholerae* non- O1 can reveal other factors contributing to the pathogenic potential of this species. The effects of subinhibitory concentrations (sub - MICs) of enoxacin (EN), ciprofloxacin (CIP), ofloxacin (OFL), norfloxacin (NOR) and pefloxacin (PFL) on hydrophobicity, biofilm formation, motility, enzymatic activities and response to oxidative stress in two *V. cholerae* non - O1 strains (84/233,10/116) were evaluated.

Methods: Adherence to xylene for hydrophobicity, microtiter plate assay for biofilm production, 0.35% agar for motility, spectrophotometric methods for lipase and pro-